

Polikistik Over Sendromunda Tanı, Prevelans ve Fenotipler

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POLYCYSTIC OVARY SYNDROME: AN ANCIENT DISORDER?

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Is Polycystic Ovary Syndrome (PCOS) an ancient disorder? Or is it a disorder of recent development, the consequence of rising metabolic stress in an increasingly obese society? And if it is ancient, why has it persisted despite its reproductive disadvantage? And can the





Irving Freiler Stein (1887-1976).

Irving Freiler Stein
(1887 - 1976).

AMENORRHEA ASSOCIATED WITH BILATERAL POLYCYSTIC OVARIES*

IRVING F. STEIN, M.D., AND MICHAEL L. LEVENTHAL, M.D.,
CHICAGO, ILL.

(From Michael Reese Hospital and Northwestern University Medical School)

ACCORDING to leading authoritative works on gynecology, the bilateral polycystic ovary is most commonly found in association with *uterine bleeding* (Fig. 1). This association has been recognized by the medical profession and is not infrequent in occurrence. Endometrial hyperplasia, multiple follicle cysts with granulosa cell lining, and a notable absence of corpora lutea in the ovary are the significant pathologic findings in such cases. The bleeding in these patients is readily explained by the fact that the increase in number of follicles lined by granulosa cells produces an excess of secretion of estrogenic hormone.

According to the same authoritative works, little or no mention is made of bilateral polycystic ovaries accompanied by *amenorrhoea*, and inasmuch as we have encountered a series of cases exemplifying the latter conditions, we desire to present the results of our study of them.

Cyst formation in the follicular apparatus of the ovary is very common and is regarded to some extent as a physiologic process. When these structures are visible to the naked eye, they are regarded as cysts; when not, they are called follicles. When this process becomes excessive, persistent or progressive, the ovary becomes enlarged, tense, tender and painful, and produces what has been termed "cystic degen-

*Read at a meeting of the Central Association of Obstetricians and Gynecologists, November 1 to 3, 1934. New Orleans, La.



Michael Leo Leventhal (1901-1971)

Michael Leo Leventhal
(1901-1971).

Stein IF, Leventhal ML. Amenorrhoea associated with bilateral polycystic ovaries

AJOG 1935; 29:181-91.

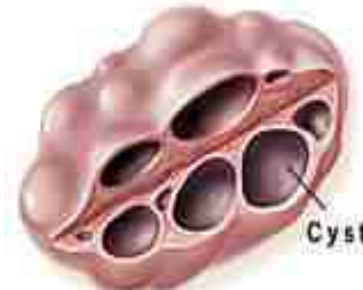
Stein-Leventhal-Tanım

Klinik

- İnfertil
- Amenore
- Maskulinize
- Obez

Morfolojik

- "Oyster overler"
- Bilateral over
- Kalın kapsül
- Follikül kistleri



Polycystic Ovary



Normal Ovary

SUMMARY AND CONCLUSIONS

1. A series of seven cases is herewith reported in which amenorrhea was associated with the presence of bilateral polycystic ovaries.

2. Bilateral polycystic ovaries are most likely the result of hormonal influences and not the result of inflammatory change.

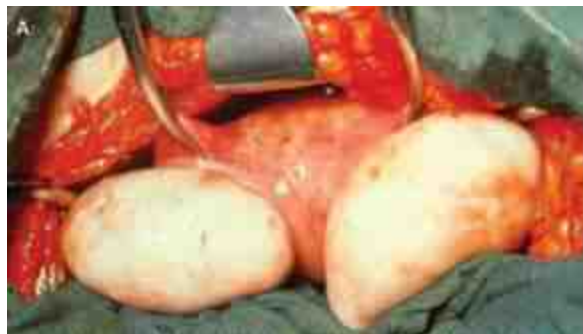
3. The diagnosis of ovarian pathology is greatly facilitated by the use of pneumoroentgenography.

4. The treatment of the amenorrhea with estrogenic hormone in the patients referred to proved unsatisfactory.

5. Surgical treatment, consisting of wedge-resection of the cystic cortex of the ovaries, was successful in completely restoring physiologic function. Menstruation in every instance became normal and remained so during the period of observation. Pregnancy followed in two patients.

6. It is our belief that a mechanical crowding of the cortex by cysts interferes with the progress of the normal graafian follicles to the surface of the ovary. This mechanical factor may account for the symptoms of amenorrhea and sterility.

7. Recurrence of the polycystic change in the ovary was not found in the follow-up examinations in any of the patients in this series.



National Institutes of Health Bethesda 1990



PCOS Tanısal Kriterler (Her iki kriter)

TABLE 2. Percentage of participants agreeing on various criteria at 1990 NICHD PCOS conference (54)

Definite or probable	Possible
Hyperandrogenemia, 64%	Insulin resistance, 69%
Exclusion of other etiologies, 60%	Perimenarchal onset, 62%
Exclusion of CAH, 59%	Elevated LH/FSH, 55%
Menstrual dysfunction, 52%	PCO by ultrasound, 52%
Clinical hyperandrogenism, 48%	Clinical hyperandrogenism, 52%
	Menstrual dysfunction, 45%

Polycystic ovary syndrome: Current and future treatment paradigms

Richard S. Legro, MD

Hershey, Pennsylvania

Am J Obstet Gynecol 1998;179:S101-8

Hakkında bu kadar çok yazı yazılan fakat az şey bilinen başka bir jinekolojik hastalık daha yoktur!



Polikistik over?

- # >8 follikül (<10 mm)
- # Periferik yerleşim
- # Hiperekojenik, artmış santral stroma (>%25)

■ Adams et al. 1985

- # Tipik ultrasonografik görünüm



Adams et al. Lancet 1985

Multikistik over?

- # Küçük çok sayıda follikül (≥ 6)
- # 4-10 mm
- # Stromal ekojenite normal
- # Stromal hacim artmamış
- # Genellikle pubertede



Adams et al. Lancet 1985

DEBATE—continued

What is polycystic ovarian syndrome?

A proposal for a consensus on the definition and diagnosis of polycystic ovarian syndrome

Roy Homburg

“It has become painfully apparent that it is not only the Atlantic Ocean that divides North America from Europe, but also the definition and diagnosis of polycystic ovarian syndrome”



Rotterdam (1-3 Mayıs 2003)



Revised 2003 consensus on diagnostic criteria and long-term health risks related to polycystic ovary syndrome (PCOS)

The Rotterdam ESHRE/ASRM-sponsored PCOS consensus workshop group

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CONSENSUS STATEMENT

Revised 2003 consensus on diagnostic criteria and long-term health risks related to polycystic ovary syndrome

*The Rotterdam ESHRE/ASRM-Sponsored PCOS Consensus Workshop Group
Rotterdam, The Netherlands*

Received October 22,
2003; revised and

PCOS Tanısal Kriterler (3 kriterden 2'si)

1. Oligo ve/veya anovulasyon
2. Klinik ve/veya biyokimyasal hiperandrojenizm
3. Polikistik overler

ve diğer nedenlerin dışlanması (KAH, Cushing send, tumor)

1. Kronik anovulasyon
2. Klinik ve/veya biyokimyasal hiperandrojenizm ve diğer nedenlerin dışlanması

Ultrasound assessment of the polycystic ovary: international consensus definitions

Adam H.Balen^{1,5}, Joop S.E.Laven², Seang-Lin Tan³ and Didier Dewailly⁴

Table III. Ultrasound assessment of the polycystic ovary (PCO): international consensus definitions

Definition
<p>1. The PCO should have at least one of the following: either 12 or more follicles measuring 2–9 mm ≥ 12 follükül ve/veya Her bir overde 2–9 mm ≥ 12 follükül ve/veya</p> <p>2. The subjective appearance of PCOs should not be substituted for this definition. The follicle distribution should be omitted as well as the increase in stromal echogenicity and/or volume. Although the latter is specific to polycystic ovary, it has been shown that measurement of the ovarian volume is a good surrogate for the follicle distribution. Ovarian volume is calculated as $0.5 \times D1 \times D2 \times D3$ Artmış over hacmi ($>10 \text{ cm}^3$) ($0.5 \times D1 \times D2 \times D3$)</p> <p>3. Only one ovary fitting this definition or a single occurrence of one of the above criteria is sufficient to define the PCO. If there is evidence of a dominant follicle ($>10 \text{ mm}$) or corpus luteum, the scan should be repeated next cycle. The presence of an abnormal cyst or ovarian asymmetry, which may suggest a tumour, needs to be ruled out, regardless of the follicle count.</p> <p>4. This definition does not apply to women taking the oral contraceptive pill, as ovarian size is reduced, even though the 'polycystic' appearance may persist.</p> <p>5. A woman having PCO in the absence of an ovulation disorder or hyperandrogenism ('asymptomatic PCO') should not be considered as having PCOS, until more is known about the situation.</p> <p>6. In addition to its role in the definition of PCO, ultrasound is helpful to predict fertility outcome in patients with PCOS (response to clomiphene citrate, risk for ovarian hyperstimulation syndrome (OHSS), decision for in-vitro maturation of oocytes). It is recognized that the appearance of PCOs may be seen in women undergoing ovulation induction therapy (OIT) and that the appearance of PCOs is also associated with theca hyperplasia.</p> <p>7. The following technical recommendations should be respected:</p> <ul style="list-style-type: none">• The latest ultrasound equipment is required and should be operated by appropriately trained personnel.• Whenever possible, the transvaginal approach should be preferred, particularly in obese patients.• Regularly menstruating women should be scanned in the early follicular phase (days 3–7). Oligo-/amenorrhoeic women should be scanned either at random or after a hCG trigger.• If there is evidence of a dominant follicle ($>10 \text{ mm}$) or a corpus luteum, the scan should be repeated the next cycle.• Follicle number should be estimated using the simplified formula: $\text{total follicle number} = \text{follicle length} \times \text{width} \times \text{thickness}$.• Follicle number should be estimated both in longitudinal, transverse and antero-posterior cross-sections of the ovaries. Follicle size should be expressed as the mean of the diameters measured in the three sections.

Hiperandrojenizm

Klinik

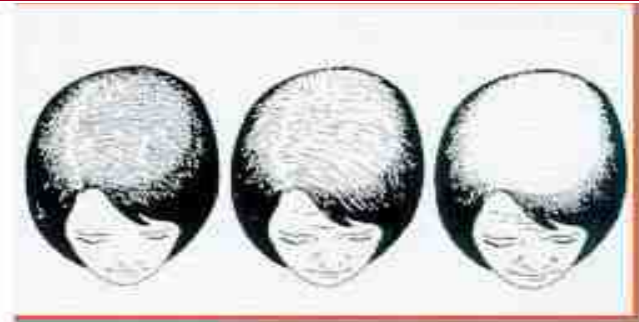
- Primer belirti hirsutismus
- Hirsutismus deęerlendirmesi subjektif
- Etnik deęişiklikler
- Akne
- Alopesi?

Biyokimyasal

- Lab ölçüm metodları?
- sT ve FAI ($+T/SHBG \times 100$) daha sensitif
 - Equilibrium diyaliz
 - SHBG ve Total T ölçümü ile sT hesaplaması
 - Amonyum sulfat presipitasyonu
- Total T
- DHEA-S. androstenedion



Chin Hair



Konsensus

- # PCOS kardinal bulguların hiperandrojenizm ve PCO morfolojisinin olduđu ovaryan disfonksiyon sendromudur
- # Tek tanısıl kriter yoktur
- # Diđer klinik göstergeler: menstruel düzensizlik, androjen fazlalığı, obezite
- # İnsülin rezistansı ve ↑ LH sık
 - # PCOS tanısı için insülin rezistansı testlerine gerek yoktur
 - # Obez hastalar metabolik sendrom açısından OGTT ile taranmalıdır
- # Risk: Tip 2 DM ve kardiyovasküler olay

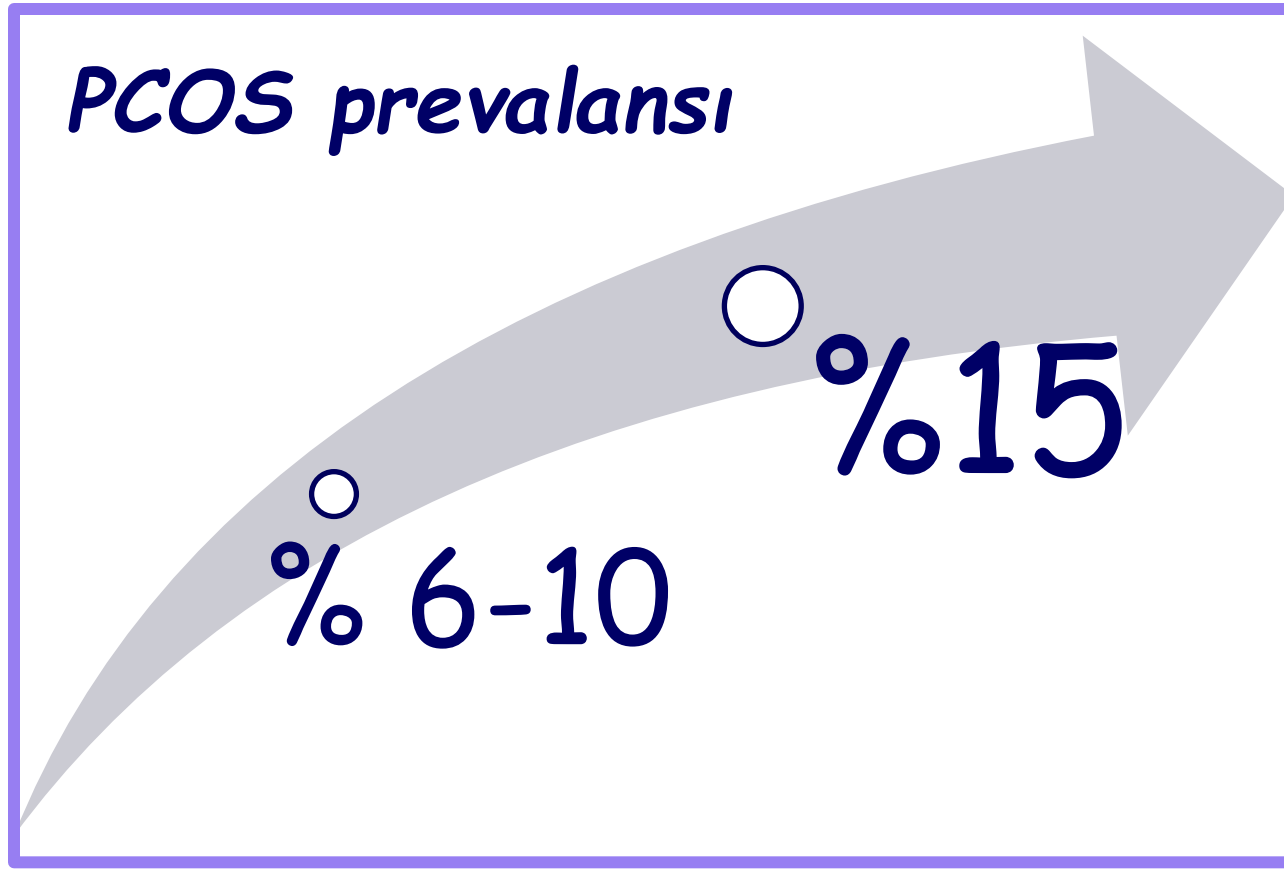
Uzun dönem sağlık riskleri

- # **Diabet** - obezite, ailede Tip 2 diabet öyküsü, insülin bozuklukları (insülin rezistansı ve β hücre disfonksiyonu)
 - # Konsensus: PCO + anovulatuvar, obez ve aile öyküsünde risk fazla
- # **Kardiyovasküler hastalıklar** - dislipidemi, insülin rezistansı
- # **Endometrial kanser** - kronik anovulasyon

Fenotip (Rotterdam kriterleri)

	Severe PCOS	Hyperandrogenism and chronic anovulation	Ovulatory PCOS	Mild PCOS
Periods	Irregular	Irregular	Normal	Irregular
Ovaries on ultrasonography	Polycystic	Normal	Polycystic	Polycystic
Androgen concentrations	High	High	High	Mildly raised
Insulin concentrations	Increased	Increased	Increased	Normal
Risks	Potential long-term	Potential long-term	Unknown	Unknown
Prevalence in affected women ¹⁰	61%	7%	16%	16%

Rotterdam kriterleri ile...



Semptom ve bulgular

	Prenatal or childhood	Adolescence, reproductive years	Postmenopausal
Reproductive	Premature adrenarche Early menarche	Menstrual irregularity Hirsutism Acne Infertility Endometrial cancer Miscarriage Pregnancy complications	Delayed menopause?
Metabolic	Abnormal fetal growth	Obesity Impaired glucose tolerance Insulin resistance Dyslipidaemia Type 2 diabetes	Obesity Impaired glucose tolerance Insulin resistance Dyslipidaemia Type 2 diabetes
Other	..	Sleep apnoea Fatty liver Depression	Cardiovascular disease?

POSITION STATEMENT: Criteria for Defining Polycystic Ovary Syndrome as a Predominantly Hyperandrogenic Syndrome: An Androgen Excess Society Guideline

Ricardo Azziz, Enrico Carmina, Didier Dewailly, Evanthia Diamanti-Kandarakis, Hector F. Escobar-Morreale, Walter Futterweit, Onno E. Janssen, Richard S. Legro, Robert J. Norman, Ann E. Taylor, and Selma F. Witchel

PCOS is a hyperandrogenic disorder

The task force concluded that PCOS was above all a disorder of androgen excess in women. As such, with currently available evidence, the diagnosis of PCOS cannot be clearly established without evidence of either clinical or biochemical hyperandrogenism. Whereas the exact measures for these may vary, the task force felt that the single most reliable indices of this feature included hirsutism and free T levels. Nonetheless, the task force recognized that the methods for measuring androgens in the circulation were frequently inaccurate and insensitive and that determination of hirsutism using visual scales was subjective, with significant interobserver variation (78), where cutoff level may be unclear (51). Finally, the task force also noted that whereas many patients with PCOS may have evidence of acne or androgenic alopecia, these features could not be used reliably as clinical signs of hyperandrogenism. The task force also noted that

POSITION STATEMENT: Utility, Limitations, and Pitfalls in Measuring Testosterone: An Endocrine Society Position Statement

William Rosner, Richard J. Auchus, Ricardo Azziz, Patrick M. Sluss, and Hershel Raff

- # T ve sT testleri yetersiz
- # Referans normal değerler belirlenmeli
 - ırk, yaş...
- # Serum TT, androjen salgılayan tumor dışlaması
- # Hiperandrojenemide en yararlı ve klinik sensitif marker: sT (tT ve SHBG ölçümü)

The Androgen Excess and PCOS Society criteria for the polycystic ovary syndrome: the complete task force report

*Ricardo Azziz, M.D., M.P.H.,^a Enrico Carmina, M.D.,^b Didier Dewailly, M.D.,^c
Evanthia Diamanti-Kandarakis, M.D.,^d Héctor F. Escobar-Morreale, M.D., Ph.D.,^e
Walter Futterweit, M.D.,^f Onno E. Janssen, M.D.,^g Richard S. Legro, M.D.,^h
Robert J. Norman, M.D.,ⁱ Ann E. Taylor,^j and Selma F. Witchel, M.D.,^k (Task Force on the
Phenotype of the Polycystic Ovary Syndrome of The Androgen Excess and PCOS Society[®]).*

^aCedars-Sinai Medical Center and The David Geffen School of Medicine at UCLA, Los Angeles, California (Task Force Chair);
^bUniversity of Palermo, Palermo, Italy; ^cLille University Hospital, Lille, France; ^dUniversity of Athens Medical School, Athens,
Greece; ^eHospital Ramon y Cajal, Madrid, Spain; ^fMount Sinai School of Medicine, New York, New York; ^gUniversity of Essen,
Essen, Germany; ^hPennsylvania State University School of Medicine, Hershey, Pennsylvania; ⁱUniversity of Adelaide, Adelaide,
Australia; ^jNovartis, Cambridge, Massachusetts; and ^kChildren's Hospital of Pittsburgh, Pittsburgh, Pennsylvania

Fertil Steril 2009;91:456–88.

PCOS Tanısal Kriterler

1. Klinik ve/veya biyokimyasal hiperandrojenizm
2. Ovarian disfonksiyon (Oligo-anovulasyon ve/veya polikistik overler) ve diğer nedenlerin dışlanması (KAH, Cushing send, tumor)

1. Oligo ve/veya anovulasyon
2. Klinik ve/veya biyokimyasal hiperandrojenizm
3. Polikistik overler

Bir sendrom nasıl tanımlanır?

- # Tıbbi pratik veya literatürde tarihsel kullanım
- # Expert bilgisi ve konsensus süreci
 - # Bilimin konsensusla işi yoktur, konsensus politikanın işidir. Konsensus varsa bilim yoktur!
 - # Michael Crichton 2003
- # Mevcut datanın analizi

Bir sendroma bağlı fenotipler ortak özellikler içermelidir

Tanı kriterleri

Klinik hiperandrojenizm

- # Hirsutismus--%75-80 PCOS
- # Persistan akne--%20-40 PCOS
- # Alopesi--%10 PCOS

Ovulatuvar disfonksiyon

- # Oligomenore -Siklusun ≥ 35 gün veya < 10 siklus/yıl

Fertil Steril 2009;91:456–88.

Polikistik over

- # Normal populusyonda %20-30
- # Yaş
 - >35 yaş -- %7.8
 - <35 yaş -- %21.6
- # Puberte, hipotalamik amenore, hiperprolaktinemi
- # Asemptomatik PCO
 - Fertilitede azalma yok
 - LH sekresyon ve pulsatilitesi normal
 - İnsülin sensitivitesi, androjen sekresyonunda hafif değişiklikler

Dışlanacak hastalıklar

- # Hipo/hipertiroidizm
 - TSH
- # Hiperprolaktinemi
 - Prolaktin
- # Klasik olmayan AH
 - Bazal serum 17-OHP (< 200 ng/dl)---ACTH stim testi
- # Cushing sendromu
 - 24 saatlik idrarda serbest kortizol (<100 µg)
- # Androjen salgılayan tümörler
 - T >200 ng/dl, DHEA-S >700 mcg/dl
- # HAIR-AN sendromu
 - Bazal açlık insülin > 80 µU/ml, 2. saat OGTT >500 µU/ml
- # İdiyopatik hirsutizm
 - normoovulatuvar, hiperandrojenemi yok
- # İdiyopatik hiperandrojenizm—PCOS?

ASRM Tech Buletin 2006
AES-PCOS Society 2009

TANISAL KRİTERLER

ROTTERDAM

AO+PCO

AES

HA+ PCO

NIH

AO+HA

Fenotipler

TABLE 1

All possible phenotypes based on the presence or absence of oligo anovulation, hyperandrogenemia, hirsutism, and polycystic ovary syndrome (PCOS).

Features	Potential Phenotypes														
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Hyperandrogenemia	+	+	+	+	-	-	+	-	+	-	+	-	-	-	+
Hirsutism	+	+	-	-	+	+	+	+	-	-	+	-	-	+	-
Oligo-anovulation	+	+	+	+	+	+	-	-	-	+	-	-	+	-	-
Polycystic ovaries	+	-	+	-	+	-	+	+	+	+	-	+	-	-	-
NIH 1990 criteria	✓	✓	✓	✓	✓	✓									
Rotterdam 2003 criteria	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
AE-PCOS 2006 criteria	✓	✓	✓	✓	✓	✓	✓	✓	✓						

Azziz. AE-PCOS Society report on PCOS phenotype. Fertil Steril 2009.

The prevalence of polycystic ovary syndrome in a community sample assessed under contrasting diagnostic criteria

Wendy A. March^{1,2}, Vivienne M. Moore², Kristyn J. Willson¹, David I.W. Phillips³, Robert J. Norman¹, and Michael J. Davies^{1,4}

¹Discipline of Obstetrics/Gynaecology, Robinson Institute, The University of Adelaide, Adelaide, SA 5005, Australia; ²Discipline of Public Health, The University of Adelaide, Adelaide, SA 5005, Australia; ³Medical Research Council, Epidemiology Research Centre and Developmental Origins of Health and Disease Division, University of Southampton, Southampton SO16 6YD, UK

*Correspondence address. E-mail: michael.davies@adelaide.edu.au

Table 1. Prevalence of Polycystic Ovary Syndrome by Diagnostic Criteria

Organization and Year	Criteria	Incidence
National Institutes of Health, 1990	Hyperandrogenism	8.7% ± 2%
	Chronic anovulation Note: Both criteria required for the diagnosis	Imputed data ⁴ : N/A
Rotterdam European Society for Human Reproduction/American Society of Reproductive Medicine—PCOS Consensus Working Group, 2003	Hyperandrogenism	11.9% ± 2.4%
	Chronic anovulation	Imputed Data: 17.8% ± 2.8%
	Polycystic ovaries Note: 2 of the 3 criteria required for the diagnosis	
Androgen Excess and PCOS Society, 2006	Hyperandrogenism	10.2% ± 2.2%
	Ovarian dysfunction (infrequent, irregular ovulation or anovulation)	Imputed Data: 12% ± 2.4%
	Polycystic ovary Note: Hyperandrogenism must be evident in combination with ovarian dysfunction and/or polycystic ovary	

Abbreviation: PCOS, polycystic ovary syndrome.

⁴Calculation of probability of polycystic ovaries in subjects without documentation by ultrasound.

Sources: March et al.⁴ Zawadzki et al.⁵ Rotterdam ESHRE/ASRM-Sponsored PCOS Consensus Working Group,⁷ and Azzi et al.⁸

Report of the international symposium: polycystic ovary syndrome: first Latin-American consensus

A. B. Motta

Linked Comment: Stadtmayer. *Int J Clin Pract* 2010; 64: 536–40.

Table 1 Phenotypes in polycystic ovary syndrome

Type	Characteristics	Related parameters
1	Hyperandrogenism Chronic anovulation Polycystic ovaries <i>(Classical PCOS, Type 1 represents the 90% of PCOS cases)</i>	Androgen levels, body weight, insulin resistance and cardiovascular risk are elevated
2	Hyperandrogenism Chronic anovulation Normal ovaries <i>(Clinical presentation of Type 1, relatively uncommon)</i>	Androgen levels, body weight, insulin resistance and cardiovascular risk are elevated
3	Hyperandrogenism Ovulatory cycles Polycystic ovaries <i>(Ovulatory PCOS)</i>	Androgen levels and cardiovascular risk are elevated Insulin resistance is moderated Body weight is between normal values
4	No hyperandrogenism Chronic anovulation Polycystic ovaries <i>(Mild form of PCOS, in discussion)</i>	No hyperandrogenism or insulin resistance Body weight is between normal values

Based on the available data and using the 1990 NIH; 2003 ESHRE/ASRM criteria and the AE-PCOS Society Task Force (4–7). PCOS, polycystic ovary syndrome.

Report of the international symposium: polycystic ovary syndrome: first Latin-American consensus

A. B. Motta

Linked Comment: Stadtmauer. *Int J Clin Pract* 2010; 64: 536–40.

- # PCOS 4 değişik fenotipte olabilir
- # 4. fenotip ile ilgili data az ve bu fenotip tartışmalı
 - Hiperandrojenizm sendromun oluşumu için şart
- # AE-PCOS cemiyeti daha fazla data elde edilene kadar 4. fenotipi ayrı tutmayı önermektedir
- # Sadece genetik çalışmalar bu fenotiplerin aynı sendroma ait olup olmadığına son noktayı koyabilir
- # PCOS fenotipi reproduktif yaşam boyunca değişkenlikler gösterebilir

Epidemiology, diagnosis and management of hirsutism: a consensus statement by the Androgen Excess and Polycystic Ovary Syndrome Society

H.F. Escobar-Morreale^{1,2}, E. Carmina³, D. Dewailly⁴, A. Gambineri⁵, F. Keleştimur⁶, P. Moghetti⁶, M. Pugeat⁷, J. Qiao⁸, C.N. Wijeyaratne⁹, S.F. Witchel¹⁰, and R.J. Norman¹¹



- # mFG skoru ≥ 8
- # Hormon profil
 - # Hirsutismusu olan her hastaya en az bir kez serum androjenleri bakılmalı
 - # fT en sensitif
- # Ovulatuvar fonksiyon
 - # 6 ay >35 gün siklus
 - # %15-40 hirsutismus düzenli fakat anovulatuvar siklus ile ilişkili (BBT, serum luteal P)
- # Metabolik profil
 - # Bel çevresi, BMI
 - # Tam lipid profili
 - # 2 saatlik 75 gr OGTT (obez veya zayıf ve risk faktörü olanlara---azınlık üye)
- # Kan basıncı ölçümü

Consensus on women's health aspects of polycystic ovary syndrome (PCOS): the Amsterdam ESHRE/ASRM-Sponsored 3rd PCOS Consensus Workshop Group

Bart C. J. M. Fauser, M.D.,^a Basil C. Tarlatzis, M.D.,^b Robert W. Rebar, M.D.,^c Richard S. Legro, M.D.,^d Adam H. Balen, M.D.,^e Roger Lobo, M.D.,^f Enrico Garbina, M.D.,^g Jeffrey Chang, M.D.,^h Bulent O. Yildiz, M.D.,ⁱ Joop S. E. Laven, M.D.,^j Jacky Boivin, M.D.,^k Felice Petraglia, M.D.,^l C. N. Wijeyeratne, M.D.,^m Robert J. Norman, M.D.,ⁿ Andrea Dunaif, M.D.,^o Stephen Franks, M.D.,^p Robert A. Wild, M.D.,^q Daniel Dumesic, M.D.,^r and Kurt Bamhart, M.D.^s

PCOS: changing women's health paradigm



Consensus on women's health aspects of polycystic ovary syndrome (PCOS): the Amsterdam ESHRE/ASRM-Sponsored 3rd PCOS Consensus Workshop Group

Hirşutismus/akne/alopesi

- Hirşutismus hiperandrojenizm için iyi bir göstergedir (Kanıt B)
- İzole akne/alopesi hiperandrojenizm için iyi göstergeler değildir (Kanıt B)
- Hirşutismus biyokimyasal olarak değerlendirilmelidir (Kanıt B)

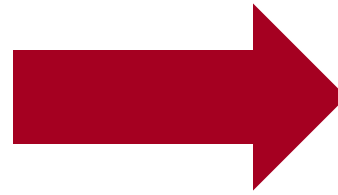
Menstruel düzensizlik

- İleri yaşlarda sikluslar daha düzenli olabilmektedir (Kanıt B)
- Düzensiz sikluslar artmış metabolik riskle ilişkilidir (Kanıt B)
- Menstruel düzensizlik derecesi fenotip şiddeti ile orantılıdır (Kanıt B)

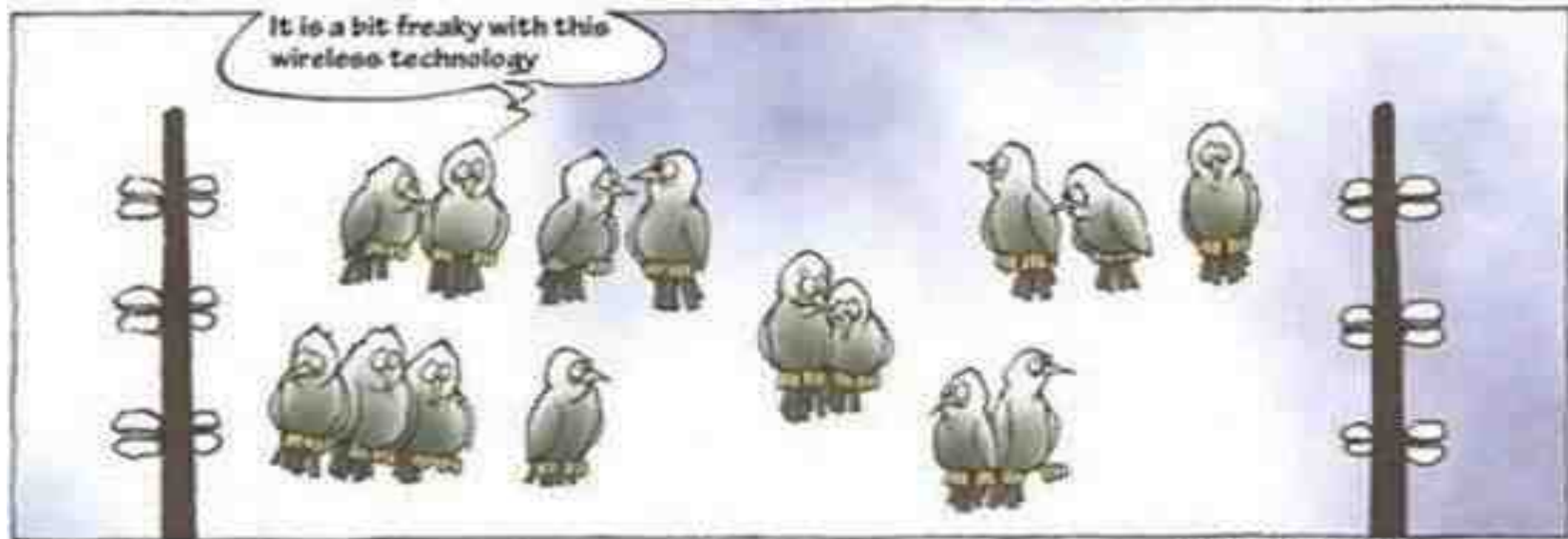
Consensus on women's health aspects of polycystic ovary syndrome (PCOS): the Amsterdam ESHRE/ASRM-Sponsored 3rd PCOS Consensus Workshop Group

- # Fenotipte etnik farklılıklar
 - # Etnik köken ve kültürel özellikler, PCOS'nun fenotipindeki değişikliklere katkıda bulunmaktadır (Kanıt B)
 - # Etnik kökene uygun cut-off değerler belirlenmelidir (Kanıt B)
- # Obezite
 - # Prevalans artmakta ve fenotip üzerinde etkili (Kanıt B)
 - # Bazı çalışmalarda BMI yüksekliği ve menstruel düzensizlik, hiperandrojenemi ve hirsütismus prevalansı ile doğrudan ilişki saptansa da konu net değil (Kanıt B)
 - # Artmış BMI ve viseral adipozite-- insülin rezistansı riski ile ilişkili, menstruel düzensizlik ve hirsütismus üzerine etkisi net değil (Kanıt B)





Ultrason Teknolojisi



Over morfolojisi

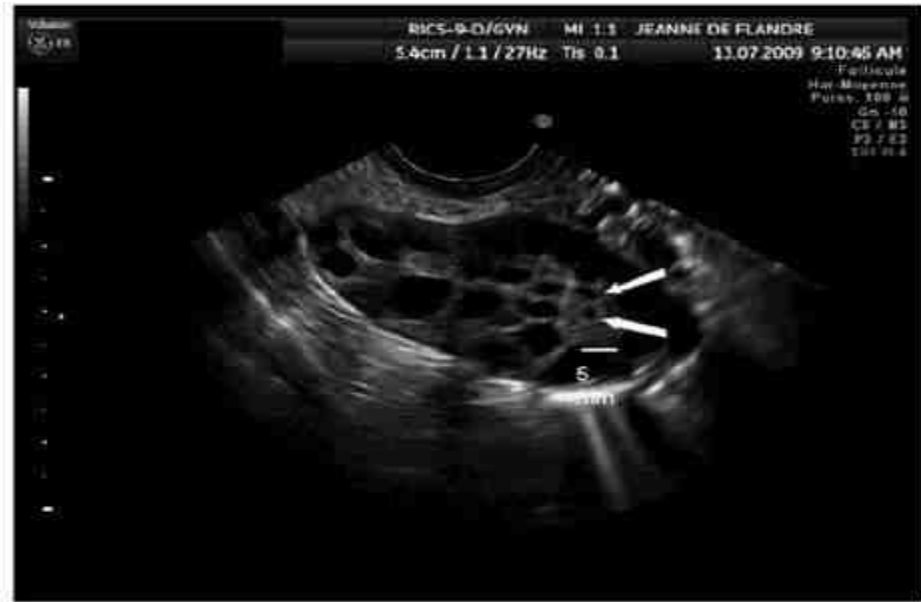
Table II. Receiver operating characteristic (ROC) curve data for the assessment of polycystic ovaries (Jonard *et al.*, 2003)

FNPO (mm)	Area under ROC curve	Threshold	Sensitivity (%)	Specificity (%)
2-5	0.924	10	65	97
		12	57	99
		15	42	100
6-9	0.502	3	42	69
		4	32.5	80
		5	24	89
2-9	0.937	10	86	90
		12	75	99
		15	58	100

FNPO = follicle number per ovary.



2001



2009

Table 1 5th, 50th and 95th percentiles (P5, P50 and P95) for follicle number per ovary and ovarian volume in healthy women with regular menstrual cycles and normal androgens.

Author (year)	Control population	Age	Technical aspects	FNPO	OV (ml)
Dujkers and Kilpong (2010)	n = 171 General population Regular menstrual cycles Hyperandrogenism not an exclusion criterion	Min: 18 Median: 25 Max: 40	January–July 2003 TVUS/6 MHz Scanned Day 6–9 Real-time counts of all visible follicles Mean OV reported:	P5: 4 P50: 13 P95: 27	P5: 3.9 P50: 7.1 P95: 11.8
Dowling et al. (2011)	n = 105 Investigation for male factor or tubal infertility Regular menstrual cycles No hyperandrogenism Combined data for Groups I A + I B	P5: 21.7 P50: 29.5 P95: 34.2	2008–2010 TVUS/5–9 MHz Scanned Day 2–5 Real-time counts of all follicles < 10 mm Mean OV reported:	P5: 7 P50: 15 P95: 26	P5: 2.7 P50: 5.5 P95: 9.8
Kritzman et al. (2012)	n = 44 (out of 76) for FNPO General population Regular menstrual cycles Subset of non-OC users Not screened for hyperandrogenism	P25: 19.9 P50: 20.2 P75: 20.4	2008–2009 TVUS/4–9 MHz Scanned at random Real-time counts of 2–9 mm follicles No available data on OV	P5: 10 P50: 16 P95: 25	NA
Ulan et al. (2012)	n = 90 General population Regular menstrual cycles No hyperandrogenism	P5: 25.0 P50: 26.0 P95: 35.5	2008–2010 TVUS/6–12 MHz Scanned Day 2–5 Offline counts of 2–9 mm follicles Mean OV reported:	P5: 6 P50: 13 P95: 26	P5: 2.0 P50: 6.0 P95: 13.0
Wentzen et al. (2013)	n = 228 General population Regular menstrual cycles No hyperandrogenism	Group 1 20–29 y n = 62 Group 2 30–34 y n = 166	2008–2010 TVUS/4–9 MHz Scanned Day 2–5 Real-time counts of 2–10 mm Mean OV reported:	Group 1 P5: 6 P50: 13 P95: 23 Group 2 P5: 5 P50: 12 P95: 21	Group 1 P5: 2.2 P50: 5.4 P95: 8.8 Group 2 P5: 2.8 P50: 5.4 P95: 8.9
Chritstone et al. (2010)	n = 509 for FNPO n = 101 for OV General population No hyperandrogenism	P5: 25 P50: 35 P95: 35	2008–2011 TVUS/6–12 MHz Scanned Day 2–4 Real-time counts of 2–10 mm Max. OV in n = 447 reported	P5: 4 P50: 10 P95: 19	P5: 2.4 P50: 5.7 P95: 10.9
Combined data ^a	n = 1127 for FNPO n = 1021 for OV	See above	See above	P5: 6 P50: 11 P95: 23	P5: 2.9 P50: 5.9 P95: 10.8

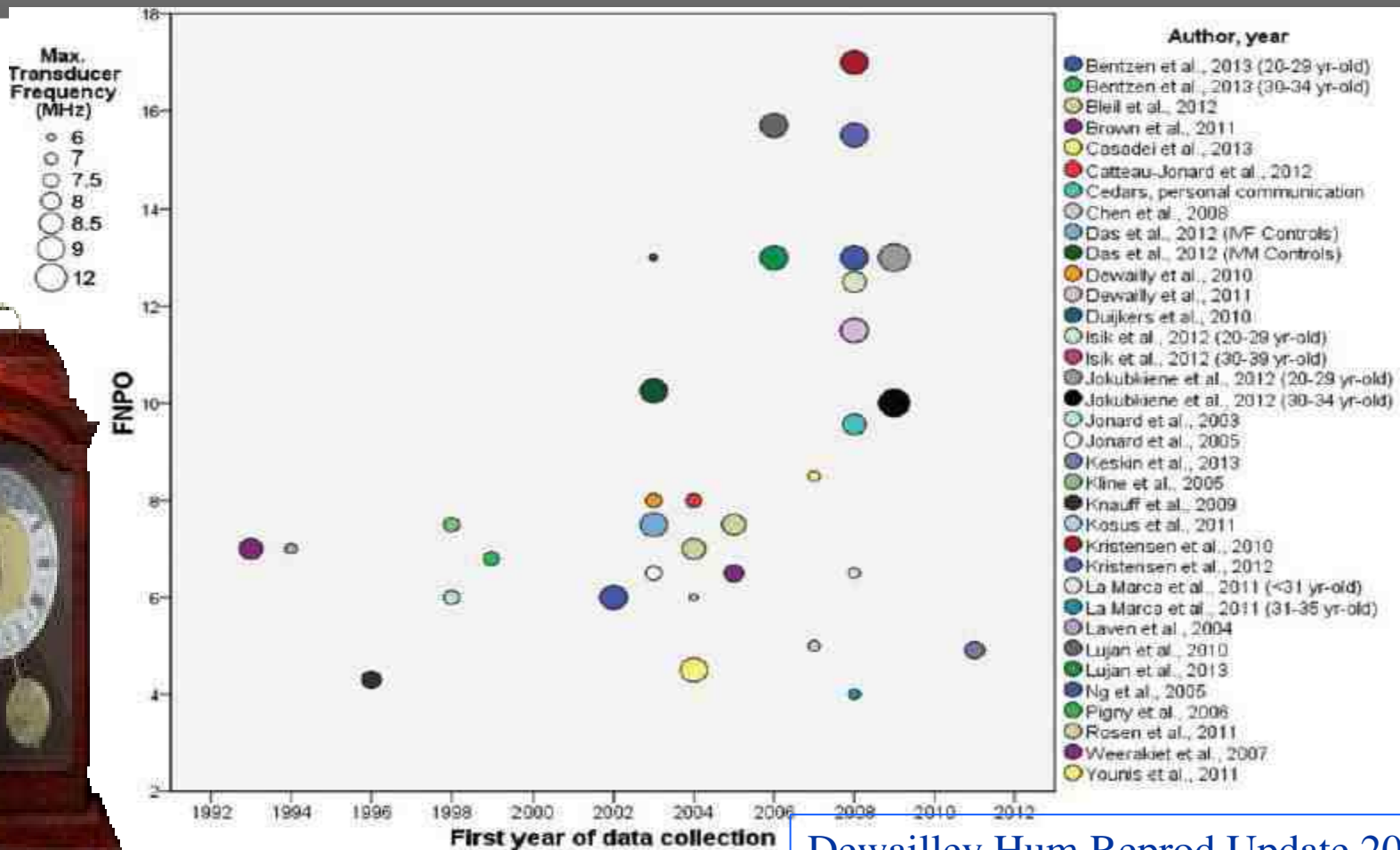
- PCOM için over başına follikül sayısı ≥ 25 (Frekans ≥ 8 MHz prob)

- Klinik pratikte eğer yeni teknoloji kullanılmıyorsa over hacim ölçümü kullanılmalı

- Subgruplarda follikül sayısı için eşik değerler net değil

- Serum AMH follikül sayısı için umut verici bir marker olsa da klinik pratikte rutin kullanılmadan önce AMH kitlerinin tam standardizasyonu gereklidir

Sağlıklı kadınlarda over başına düşen ortalama folikül sayısı





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9

Anti-Müllerian hormone and polycystic ovary syndrome

Priya Bhide, MD, MRCOG, Roy Homburg, FRCOG *



❖ 4.7 ng/ml : sensitivite: %79.4
Anti-Müllerian Hormone
spesifisite %82.8



❖ J Clin Endocrinol Metab 2013

SPECIAL FEATURE

Commentary

Renaming PCOS—A Two-State Solution

Andrea Dunaif and Bart C. J. M. Fauser

Conclusions: There should be two names for the PCOS phenotypes: those with primarily reproductive consequences should continue to be called PCOS, and those with important metabolic consequences should have a new name. (*J Clin Endocrinol Metab* 98: 4325–4328, 2013)

Metabolik Reproduktif Sendrom?



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journal homepage: www.elsevier.com/locate/bpobgyn

1

Diagnostic criteria for PCOS: Is there a need for a rethink?

Didier Dewailly, MD, Professor ^{a, b, *}

- ❖ En sık Rotterdam kriterleri (>10 yıl)
- ❖ Biyolojik HA tanısı halen tartışmalı
- ❖ OA tanısı için kriter yetersiz
- ❖ PCOM revize edilmeli—C9orf3 gen polimorfizmi
- ❖ AMH--- PCOM marker
- ❖ **ACİL-YENİ KONSENSUS KONFERANSI**

SONUÇ

- # Üreme çağındaki en sık endokrinopati olmasına rağmen halen bilinmeyi çok..
- # Tanı kriterleri universal değildir, tanı kriterine göre fenotipler farklılıklar göstermektedir..
(hiperandrojenik olmayan, anovulatuvar PCO???)
- # Prevelansı uygulanan tanı kriterine göre değişiklik göstermektedir (%5-20)..
- # Multisistemik, multidisipliner yaklaşım gerektirir
- # Standart tanı kriterlerinin ve etnik kökenlere göre eşik değerlerin belirlenmesi bilinmeyenlerde daha hızlı ilerlemeye yardımcı olacaktır.

SONUÇ

- # Hiperandrojenizm tanısı klinik olarak konulmalı, androjen testleri HA dışlamada kullanılmalı
- # FNPO kullanılan ultrason cihazına göre değerlendirilmeli..
- # AMH PCOM tanısı için umut vadetmektedir
- # Metabolik risk taşıyan fenotiplerin erken tanısı ve takibi uzun dönem morbidite ve maliyet açısından çok önemlidir
- # Genetik çalışmalar fenotiplere ve bilinmeyenlere ışık tutacaktır..

TEŞEKKÜR EDERİM...



Power and Control Over any Situation

Living life with PCOS

The good times, the bad times

MILLIONS OF WOMEN WITH
POLYCYSTIC
OVARIAN SYNDROME
ARE GOING
UNDIAGNOSED
UNTREATED
UNSUPPORTED
THIS MUST CHANGE

PCOS AFFECTS 5 TO 10 PERCENT OF THE FEMALE POPULATION.

PCOS AFFECTS FRIENDS, LOVERS AND SPOUSES TOO.

EXPERIENCING ERRATIC PERIODS? IT COULD BE PCOS

September
is
PCOS
awareness
month

LIKE A
GIRL
Support
PCOS
Awareness

TEŞEKKÜR EDERİM...



POSITION STATEMENT: Glucose Intolerance in Polycystic Ovary Syndrome—A Position Statement of the Androgen Excess Society

Kelsey E. S. Salley, Edmond P. Wickham, Kai I. Cheang, Paulina A. Essah, Nicole W. Karjane, and John E. Nestler

- # %31-35 Bozulmuş glukoz toleransı
 - U.S %1.6
- # %7.5-10 Tip 2 DM
 - U.S %2.2
- # Tüm hastalar 2 saatlik 75 gr OGTT ile taranmalı (BMI bağımsız olarak)

Consensus on infertility treatment related to polycystic ovary syndrome

The Thessaloniki ESHRE/ASRM-Sponsored PCOS Consensus Workshop Group March 2–3, 2007, Thessaloniki, Greece*

- # Yaşam tarzı değişiklikleri (Kilo verme, egzersiz..)
- # İlk basamak: CC
- # İkinci basamak: Egzojen gonadotropinler veya LOS
- # Üçüncü basamak: IVF

Report of the international symposium: polycystic ovary syndrome: first Latin-American consensus

A. B. Motta

Linked Comment: Stadtmayer. *Int J Clin Pract* 2010; 64: 536–40.

- # Düşük doğum ağırlığı (LBW), prekoks pubarş (PP) ve PCOS ilişkisi tartışmalıdır, etnik değişiklikler göstermektedir. PP steroidogenez genlerinde değişiklikler vardır
- # LBW/PP tanı 18 yaşından sonra konmalı
- # Hiperinsülinemi/hiperandrojenizm—ovulasyon, endometrial fonksiyon, oosit gelişimi, blastokist implantasyonu
- # Kardiyovasküler risk faktörleri (obezite, insülin rezistansı, dislipidemi, ↑CRP)—androjenlerin rolü netleşmeli
- # Obezite ve/veya metabolik sendromu olan PCOS NAFLD açısından taranmalı—sonografi (%41-55)

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Neden?

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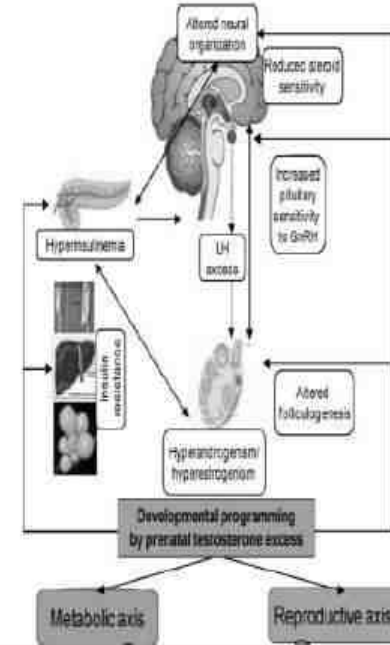
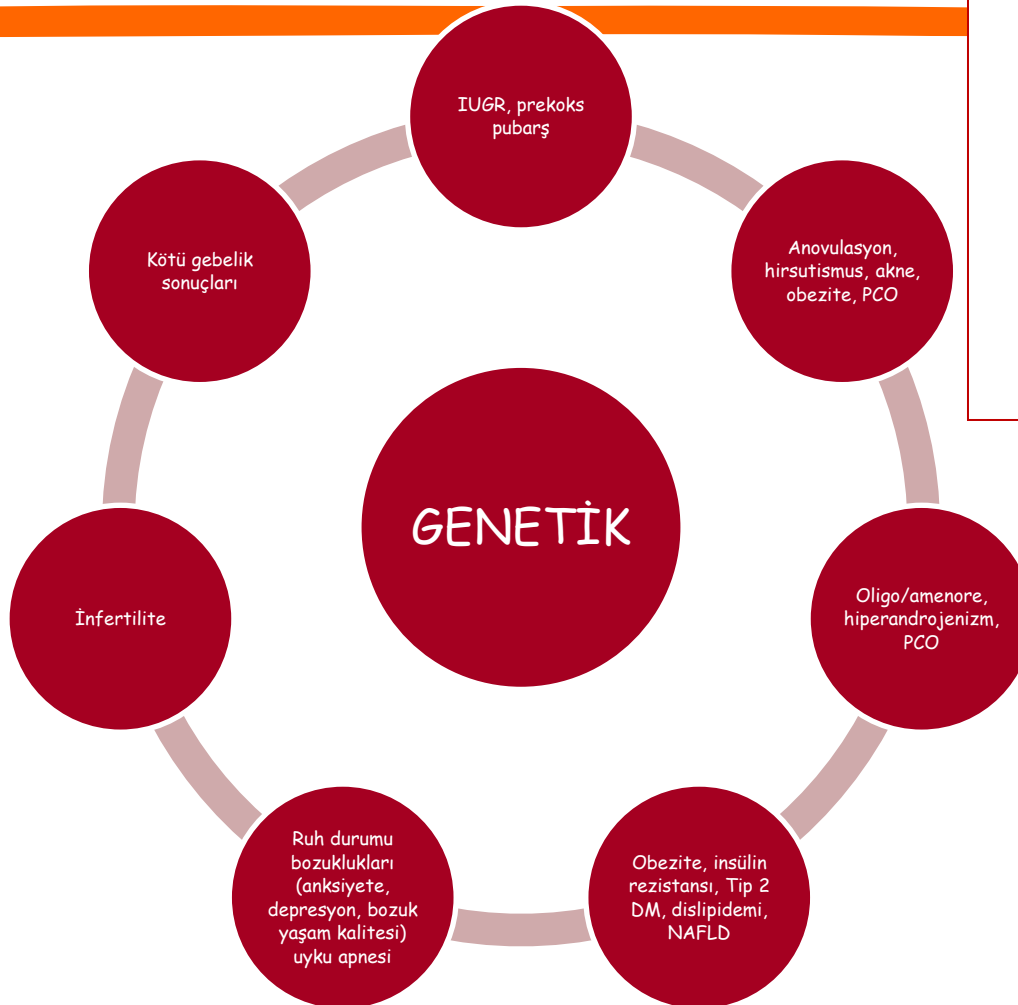
FNPO = follicle number per ovary.

Jonard et al. Ultrasound examination of polycystic ovaries: is it worth counting the follicles? Hum. Reprod. 2003, 18, 598±603.

PCOS TANI-ÖZET

- **Oligo/amenore**
FSH, LH, E2, TSH, Prolaktin, hCG
- **Klinik hiperandrojenizm**
Hirsütismus, akne, alopesi
- **Hiperandrojenemi**
sT, tT ve SHBG, FAI
tT-DHEA-S
- **PCO**
Transvajinal ultrasonografi

ÖZET



Kardiyovasküler hastalıklar, endometrium ca.....

Definition and significance of polycystic ovarian morphology: a task force report from the Androgen Excess and Polycystic Ovary Syndrome Society

Didier Dewailly^{1,*}, Marla E. Lujan², Enrico Carmina³, Marcelle I. Cedars⁴, Joop Laven⁵, Robert J. Norman⁶, and Héctor F. Escobar-Morreale⁷

❖ FNPO ≥ 2 (20% of follicles with ≥ 2 MHz frekans)

❖ Over h... m³

❖ 3 D ULT MRI

